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ABSTRACT

Ten years after institution of the multiservice effort to develop a common doctrine and procedures for systematic development of training and education curricula, which became known as Instructional Systems Development (ISD), a U.S. Army Training Board report declared that the Army's military occupational specialties were devoid of serious analysis, design, and developmental work. One reason for ICD's lack of success may have been the Army's failure to establish a fully trained professional corps of civilian training developers led by training managers who were deeply grounded in ISD. At the school level, neither the active duty military nor the civilian specialists were well grounded in ISD. At the same time, civilian specialists found their jobs to hold little prestige, and commanders and service school commandants failed to grasp the ISD concept. Like competency-based education, ISD had strong behaviorist roots. Many educators, on the other hand, tend to follow a humanist philosophy. Part of this problem with educational philosophy may have been rooted in ISD itself since the system was cumbersome, bureaucratic, and too time-consuming to follow. It must also be remembered that at the time of ISD's implementation the Army was also experiencing serious problems with recruitment. Notwithstanding all of these possible causes for the failure of ISD, perhaps the key reason for its failure was an inability to come to grips with the Army's real training needs. (MN)

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# Where Did We Go Wrong? An Analysis of the Way Instructional Systems Development Was Mustered Out of the Army

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# Where Did We Go Wrong? An Analysis of the Way Instructional Systems Development Was Mustered Out of the Army.

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## Preface

This paper is based on critical reflections about what has seemingly gone wrong with the systems approach to training as set forth in the Interservice ISD Procedures. It does not address the thousands of man-years of dedicated service of both military and civilian personnel within the U.S.Army who have produced many excellent courses of instruction with their attendant training materials. Numerous innovations in training, training development and training management can be pointed to with justifiable pride by Army personnel over the past ten years. The systems approach to training is still observed more or less as a mental process by competent personnel who are involved in training development. The procedures, though modified somewhat, remain enforced by a U. S. Army Training and Doctrine Command regulation.

## Introduction

A recent U.S.Army Training Board Report (United States Department of the Army,1985) concluded that over fifty percent of the Army's military occupational specialties were "in disarray, based upon random and erratic development efforts" and were "devoid of serious analysis, design and developmental work." (p.2). It charged that Army training products were not standardized, were often contradictory, and failed to use the full capabilities of U.S. soldiers. The Army Training Board faulted the U.S. Army Training and Doctrine Command (TRADOC) for its failure to "employ scientific methods in the development, fielding, and validation of training products." (p. 2).

In 1974, the Inter-service Training Review Organization (ITRO), consisting of the heads of the training commands within the Air Force, Army, Navy and Marine Corps, instituted a multi-service effort to develop a common doctrine and procedures for systematic development of training and education curricula. Appropriate training methods and media and instructional materials were to be an outgrowth of this systematic development. This approach was "Instructional Systems Development" or now more commonly referred to in Army training circles as the "systems approach to training (SAT)." (United States Department of the Army, 1982). The ITRO effort was primarily funded by TRADOC through a contract with Florida State University. The project was supervised by a committee appointed by the ITRO. Dr. Worth Scanland from the Navy served as its chairman. The

result of this effort was a series of five volumes which became known as the Interservice ISD Procedures (Branson, 1975 a,b,c,d,e). Scanland described this work as "probably the most basic and authoritative document on that subject in the world." ISD committee of ITRO intended that these inter-service procedures would become doctrine in each of the separate service training commands. A system of analysis, design, development, implementation, and evaluation would become critical to all training development.

With such precise and thorough "doctrinal" guidance, why is there apparent "disarray" in Army training ten years later? Considerable exploration was required to develop a pattern of explanation. Twenty-five key researchers and training practitioners with intimate knowledge and expertise with ISD from all four military services were asked to state their opinions. As could be expected, no single answer emerged. Yet many seemed to agree that there now has been a renewed emphasis on conventional instructional approaches. The current prevailing trend is away from self-pacing and non-traditional instructional methods toward more conventional group-pacing and human instructor-centered classroom situations. The role of automated systems in delivery and management of training (i.e., computer-assisted instruction (CAI) and computer-managed instruction (CMI) is under critical review. Some military personnel favor a return to strictly conventional teaching as seemingly remembered in the "good old days" with middle management non-commissioned officers back in charge of teaching, to include being the primary dispensers of technical information and serving as live role models in front of the classrooms for trainees to emulate. Training and training development were again considered one and the same functional area. The "Little Red School House" came back into vogue as a descriptive metaphor of TRADOC education and training. In the forefront of these changes has been the Commander of TRADOC, General W. R. Richardson who expressed dissatisfaction with the "atmosphere of the classroom". (Richardson,1984). A definite need was apparent for TRADOC trainers to improve the learning environment. This improvement appeared to have been expected to come from human intervention in the classroom more than from advanced instructional technology. The high expectations of ISD and non-conventional instruction that were raised in the mid-1970s had not been realized.

## Pattern of Explanation

One of the principal reasons for the lack of expected success with the systems approach to training may have been the failure of the Army, TRADOC in particular, to establish a fully-trained, highly professional corps of civilian training developers lead by knowledgeable training managers at TRADOC who were deeply grounded in ISD theory and

doctrine. And that this corps have the necessary fiscal resources and command support to "enforce" ISD on each of the twenty-two Army Service Schools who were primarily responsible for training development. Instead, implementation rested largely on the shoulders of active duty military personnel and low-grade civilian education specialists. Headquarters, TRADOC, had the responsibility to train this work force, develop standardized courses of ISD training for their staff and faculty, visit the service schools and provide on-site guidance and expertise. One Headquarters, TRADOC key person during that period reflects: "It never did any of those things, or did them in such a poor fashion that they didn't work". He continues: "The people we hired were not very good. They simply didn't know their jobs. So we had the blind leading the blind".

At school level, neither the active duty military nor the civilian specialists, who generally worked for the uniformed personnel were well-grounded in ISD. They did not understand the ways to meet the technical requirements, yet produce quality instructional materials in a timely fashion. Often the mechanistic details and the standardization of an ISD facade took precedence over relevant training of soldiers in the tasks needed to accomplish the military mission. ISD became to many, an excruciatingly painful experience, with no visable training products to show for their efforts. About the time the military personnel became functionally competent, their tour of duty was finished, hence they moved on to other career challenges and were replaced by neophytes. This cycle continues even to this day.

Meanwhile, the civilian specialists found their jobs to hold little prestige. They were continuously training their military supervisors. Chances for promotion in the 1710/1712 civilian career fields were slim at best and often entangled with education services specialists and officers who managed Army Education Centers and who had little or nothing to do with training development nor did they generally share the same education philosophy as the trainers did. Hence, these career fields seemed to offer little for the bright, creative, upwardly mobile training developer. On the contrary, civilians, who "treaded water, met the daily mail but made no waves," seemed to fare better over the years than those who attempted to develop a professional expertise and effect change in the "status quo". At least, that seemed to be the perception that existed.

The commanders and service school commandants failed to grasp the ISD concept. The initial TRADOC Study Group had recommended a slow, step-by-step implementation extending over five years. General William DePuy, the TRADOC commander during that period, was not known to be a patient man. At the TRADOC Commander's Conference in December 1975, he purportedly told all twenty-two school commandants: "Move out! I want all of us to get into this Systems Approach to Training". A witness at this conference remembers that there

were no questions. The Commandants appeared not to know enough about the "Systems Approach" or ISD to ask any. Nor did the Headquarters, TRADOC, command element follow through on implementation. It did not develop a management system that said, in effect: "You have got to apply the Systems Approach". Instead, when Commandants came to Headquarters for dollars and manpower to teach courses and programs, no one asked if a front-end analysis had been done. Money and spaces were given out without regard to implementation of ISD. Hence, the word quickly got around that the "Systems Approach" was verbage. No one was really serious about it.

The lack of a common education philosophy among Army educators and trainers, especially those civilians within the Army training and educational systems, may have been a primary underlying cause fo lack of success with ISD. One senior service school technical advisor stated:

"The more basic global kind of problem is with education in general; military training is simply a subset of that. There is simply no fundamental principle or educational doctrine, if you want to put it in a little bit of a military context, that is subscribed to and practiced with religious fervor."

ISD, like competency-based education, has strong behaviorist roots (Gagné and Briggs, 1979; Dick and Carey,1978; Nickse, 1981). Many educators, on the other hand, tend to follow a humanist philosophy as espoused often in adult and continuing education (Knowles, 1980; Mezirow, 1985; Rogers,1969). The underlying issue seems whether emphasis is placed on the organization and its overwhelming need to design and develop or, using a term out of the 1950s, engineer learning and the learners to meet organizational goals and purpose; or on the human learner and his or her individual needs for learning (Kolesnik,1975).

Though strong advocates of ISD, Dick and Carey (1978) recognized the fact that most teachers viewed themselves as humanists and were almost always concerned with the feelings, attitudes, beliefs, and values of their students; those things which made an individual distinctly human. Yet, teachers prefer a systematic approach, which used research and knowledge on the conditions of learning required for students to achieve clearly defined outcomes. Education specialists involved in implementing ISD emphasized the "Army job" and the task analysis which attempted to develop those clearly defined tasks with precise conditions and standards. The analysis did little to look at soldier needs. The underlying assumption seemed to be that individual learning needs were so insufficient in relation to Army training requirements that training developers need not be particularly concerned with analyzing soldier learning needs. Human soldiers were merely to be molded through procedural or instrumental learning to do the Army tasks in

accordance with Army prescribed conditions and standards as mechanically established through the analysis phase of ISD. In other words, learning was viewed as a mechanical process (input >process >output >outcome) not as a human experience.

Part of the problem with educational philosophy may be attributed to the nature of ISD, itself. For some, ISD is simply a name that has been used for the past few years for a systematic descriptive approach to analyzing the requirements for instruction, design and developing the instructional system, implementing it and evaluating how effective a trainer has been in accomplishing what he or she started out to accomplish. In essence, it was a thought process important for trainers and educators to follow in order to insure mission accomplishment. Yet in 1975, this thought process was codified in over 1,000 pages of procedures and sent throughout the Army training establishment as TRADOC Pamphlet 350-30. Implementation of ISD then became an effort in persuading large numbers of people at the service schools to read those 1,000 pages of highly technical material and to thoroughly understand its contents. One service school technical advisor felt strongly that the Interservice ISD procedures as embodied in TRADOC Pamphlet 350-30 seriously hindered the implementation process:

" It was simply too cumbersome, too bureaucratic, too time consuming to be practical to follow. Whoever wrote that document must never have envisioned it being read by sergeants or people with no particular training in educational technologies."

Also, it must be remembered that during the period 1975-1980, the U.S. Army was experiencing a serious problem with soldier recruitment. Substantial shortfalls in sheer numbers of enlistees was common place. Large percentages of those accessions who did come into the Army were non-high school graduates and were below average as measured by the Armed Services Vocational Aptitude Battery. It was the period of the so-called "mis-normed ASVAB". Illiteracy and marginal literacy among soldiers were serious problems. Readability and comprehension of technical, field and soldier manuals became a major issue. The majority of soldiers in many military MOSs were failing their written Skills Qualification Tests. Testing showed that many soldiers could read only around the fourth or fifth reading grade level. The average reading grade level of all incoming soldiers was around eighth grade level as measured by such standardized reading tests as the Adult Basic Learning Examination (ABLE) or the Test of Adult Basic Education (TABE). Readability of publications and basic skills education for soldiers became crisis points of concern at Headquarters, Department of the Army; which in turn placed greater demands on training developers to write and edit all training materials to meet seventh through ninth reading

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grade level as measured by the Flesch-Kincaid Readability Formula without the slightest regard to ISD or the systems approach to training (Anderson,1986).

Notwithstanding all of the above reasons for the lack of success with ISD implementation and the circumstances inherent in the era in which implementatiop was attempted, perhaps the key or overriding problem has been TRADOC's inability to come to grips with the "real" training needs of the Army. The systems approach to training,as codified in TRADOC Pamphlet 350-30, assumes somewhat of a stable organizational environment where Army jobs are appropriately defined and documented and the Army missions are relatively clear and understandable. The training developers, along with the combat developers and the military personnel managers, work from Army structural documents called Tables of Organization and Equipment (TO&Es) and Tables of Distribution and Allowances (TDAs) which are often modified (MTOEs; MTDAs). Selection, recruitment, training and equipping the Army generally follow along this documentation. Divisions, brigades, companies, platoons, squads, teams and a myriad of non-divisional units are part of this documentation. Missions are attached to units. Military occupational specialties, career managment fields and grade structures are divined and serve as integral parts of this system.

But the Army, in reality, is not a "fixed" organization that can be captured at any point in time and cemented into a definitive organizational documentation that is "real" in detail. The problems with this documentation are magnified during the decade of the 1980s with force modernization and new doctrinal approaches.

Over 200 major end items of new equipment are being infused into the Army inventories. Units have old equipment, new equipment and a mixture of different equipment with rapidly changing authorization documents. Operation and maintenance of this equipment and its integration into operational units radically change soldiers' jobs. Similarly new Army doctrine (AirLand Battle 2000/Army 21) has caused major rethinking about how the Army intends to fight. Instead of being a reactive, defensive force of the late 1970s, Army 21 envisions continuous operations with small units dispersed and operating over an extended battlefield,in more or less autonomous manner, with small and erratic logistical support. Soldiers must be both technically and tactically proficient. They must not only react to and survive the battlefield, but be pro-active with the ability and the will to swarm against the enemy and scram back into these widely dispersed configurations rapidly and in a highly synchronized manner. This doctrine requires soldiers to be able to think and act based on sound thought and judgment under severe battlefield conditions. It is not to be an Army of human robots with each person programmed through procedural training but an Army characterized by soldiers who are flexible, who can learn

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quickly and function effectively under tremendous stress, doing many different kinds of jobs.

With infusion of force modernization and Army 21 doctrine as complicating factors, unit commanders, training officers and NCOs in field environments fully realize that their units are, in reality, far different from what the authorization and mission documentation prescribes. It is the unit's responsibility to use the assigned or attached "for-duty" soldiers to accomplish unit missions, to operate and maintain available on-hand equipment and to accomplish daily the special assignments as directed by the chain-of-command. Of course, each soldier is expected to have a "basic load" of some type of technical skills provided by the Army's "schoolhouse". Similarly, soldiers must possess the ability to perform the common soldiering tasks. Yet perhaps more important to successful unit operations is the soldiers' ability to learn and perform new jobs and tasks continuously throughout their tours of duty. This provides the flexibility and elasticity so crucial to mission accomplishment in the real Army. Soldiers are expected to glean information whether from reading or from verbal communications with peers, supervisors, subordinates and/or from other people within the situational environment. They must be able to meet new challenges and exercise those qualities that are uniquely human, i.e., think and take appropriate actions based on those thoughts albeit pro-active or reactive in nature. This cycle of dialogue, reflection and action continues as situations emerge and until the goal is accomplished. Hence, a large part of the learning needs of the Army are strategies that facilitate soldiers to function effectively in a great variety of situational contexts. Procedural learning based on job task analysis, by itself, is inadequate. Some alternative possibilities include discovery learning in situational contexts as can be portrayed on interactive video simulations. The need for advanced instructional systems technology in this area is tremendous. As this type of instruction is designed and developed, the human element must be addressed at every step of the way.

## Conclusion

In conclusion, Interservice ISD procedures as embodied in TRADOC Pamphlet 350-30 are not widely adhered to in the U.S. Army today. On the contrary, only a few individuals, "the-old-timers" perhaps, would recognize the publication by its title, or could even find a copy. The mental process of analysis, design, development, implementation and evaluation is, however, considered and used by trainers, training developers, and researchers who are competent in their jobs of providing training and training materials for soldiers. Similar to the Army staff study format for decision-making, the ISD mental model is common sense when developing training. There is really no replacement for it. Whether it

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is being employed properly is a different matter. With the Army's state of flux with force modernization and Army 21 doctrine, it is somewhat amazing that the Army Training Board only found 50% of the MOSs in disarray.

## Recommendations

Perhaps the greatest challenge is not in the area of developing procedural technical training tailored for soldiers by grade level in each MOS and by special skill identifiers. Current efforts by the Army service schools when coupled with technical training mandated by new equipment and doctrine may well be adequate to provide soldiers with a "basic load of technical skills". The ISD process should continue to guide developers in preparing, implementing and evaluating this technical training. But the "real" Army need may well be in finding and implementing learning strategies that are effective internally among soldiers. These learning strategies must expand soldiers' human capabilities to sort through the myriad of available information, latch onto essential information elements, develop courses of actions (all in concert with other human beings through dialogue), think, make decisions and take actions within situational contexts to accomplish specific goals. This learning emphasis seems the most appropriate for the "Army 21 soldiers".

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